

REMARKS

Claims 1, 12, 20, 26, 28, 38, and 47 have been amended. Claims 27, 53, and 54 have been canceled. Claims 1-2, 4-5, 7-24, 26, 28-29, 32, and 34-51 are now pending. Claims 5, 7-24, 26, 32, and 34-51 are withdrawn. A two-month petition for extension of time is being filed concurrently herewith. Applicants reserve the right to pursue the original claims and other claims in this and other applications. Please reconsider the above-referenced application in light of the amendments and following remarks.

Claims 1, 4, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Okamoto. The rejection is respectfully traversed.

Claim 1, as amended, is not taught or suggested by Okamoto. Okamoto does not teach or suggest a liquid crystal display device having one polarizing plate. Okamoto does not teach or suggest that a product of a height of the recesses and projections of a light diffusive reflective electrode and a birefringence of a liquid crystal layer is in the range of about 10 to 53 nm at a twist angle of about 40 degrees and about 10 to 64 nm at a twist angle of about 65 degrees.

It is important to decrease the retardation fluctuation of the liquid crystal layer, which originates in the height of the recesses and projections of the light diffusive electrode, in order to improve the contrast ratio (See Applicants' FIG. 3). Applicants discovered that the retardation fluctuation of the liquid crystal layer, in combination with the fluctuation of the thickness of the liquid crystal layer changes according to the twist angle (FIG. 2). In other words, as the twist angle becomes larger, the fluctuation of the retardation is smaller. Therefore, it is possible to provide a reflection type liquid crystal display device having a high contrast ratio by determining the twist angle of the liquid crystal layer and the range of height of the recesses and projections of the light diffusive electrode.

Accordingly, Okamoto does not disclose or suggest the relationship between the twist angle of the liquid crystal layer and the range of the height of the recesses and projections of the light diffusive reflective electrode. Okamoto does not teach or suggest that the retardation fluctuation of the liquid crystal layer, with the fluctuation of the thickness of the liquid crystal layer, changes according to the twist angle. Accordingly, Okamoto does not teach or suggest the limitations of amended claim 1. This fact is underscored by the Office Action's acknowledgement that Okamoto "does not disclose [the] product of a height of said recesses and projections times said birefringence." (pg. 2).

The Office Action asserts, however, that it would have been obvious to modify Okamoto's device since it has been held that where the 'general' conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. Applicants respectfully submit that Okamoto does not disclose the 'general' conditions of amended claim 1. Okamoto does not teach, much less suggest, a product of a height of the recesses and projections of the light diffusive reflective electrode and a birefringence of the liquid crystal layer. Accordingly, Okamoto does not disclose or suggest the 'general' conditions of claim 1.

Further, Okamoto does not teach or suggest that the product of a height of the recesses and projections of the light diffusive reflective electrode and a birefringence of the liquid crystal layer, is in the range of about 10 to 53 nm at a twist angle of about 40 degrees and about 10 to 64 nm at a twist angle of about 65 degrees, respectively. "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. § 2143.03. In this case, Okamoto does not teach or suggest any range for the product of a height of the recesses and projections of the light diffusive reflective electrode and a birefringence of said liquid crystal layer.

Claims 2 and 4 depend from claim 1 and should be allowable along with claim 1 for at least the reasons provided above regarding claim 1, and on their own merits.

Please also note that Okamoto discloses a "laminated phase plate . . . having a retardation value between 100 and 180 nm." Claim 2, in contrast, recites that the "phase plate has a retardation in the range of about 280 to 470 nm." Accordingly, Okamoto does not teach or suggest Applicants' claimed phase plate range values. Claims 28 should be allowable for reasons similar to those discussed above in connection with claim 1. Claim 29 should be allowable along with claim 28 and for other reasons.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Dated: December 23, 2004

Respectfully submitted,

By 

Mark J. Thronson

Registration No.: 33,082

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorney for Applicants